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Social Values and the Economic Development of Regions

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Social Values and the Economic Development of Regions

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ABSTRACT *Social values are argued to effect economic life. The literature distinguishes several key social values, such as social capital, modernism and tolerance. Overlapping and conflicting views argue that higher levels of social values correlate with higher levels of economic development. Our paper contributes to the literature in two ways. First, we develop a comprehensive theoretical model on the relation between social values and economic development. Second, we test this model for European regions. Our findings suggest that social values matter but that they work on the level of subgroups in the population rather than the region as a whole.*

Of all the factors influencing economic development, social values are perhaps the mistiest and least understood of all. There are two reasons for this. In the first place, the concept of social values itself is elusive. The impressive literature on social values (and the related literature on culture) notwithstanding, a definition of social values and a conceptual understanding of how they affect economic development remain very much the subject of debate. The second reason is that different social values never work in isolation of one another (Landes, 1998). Consequently, social values have never enjoyed popularity among economists as a variable in their research. However, economists have increasingly come to recognize the importance of “soft factors”, such as social values. The growing literature on social capital stands as proof of that. Social capital is an attribute of relations among human beings (economic actors) and is sometimes even defined as an asset of individuals (Field, 2003; Westlund, 2006). Since the study of economics is largely about the economic behaviour of individuals, social capital can be easily involved. Social values, although exercised by individuals, are more commonly seen as an attribute of societies, which means that it should be studied at the level of nations or sub-national regions.

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This contribution adds to the literature on the influence of social values to the economic development of regions. To the extent that social values matter in the explanation of regional development, regional differences in economic development should correlate with regional differences in social values. Following Granato *et al.* (1996), we define social values (or culture) as “a basic system of common values that help shape the behavior of the people in a given society” (p. 608). The key notion here is that social values shape behaviour. Certain behaviours, such as risk-taking, embracing new technologies and openness towards new ideas, are considered more conducive to economic development than a more inward-looking attitude (Landes, 1998; Huntington & Harrison, 2000). The difficulty in the present discussion is that the literature distinguishes very different kinds of behaviour in relation to economic development. For example, the protestant work ethics identified by Weber (2003/1905) triggers a different kind of behaviour from the bohemian and creative values advocated by Florida (2002a). So where social values (or culture) are often understood as a fairly homogeneous set of behaviours and characteristics of the people in a society (Granato *et al.*, 1996; Hofstede, 1980), the behaviours that are conducive to economic development may originate from a diverse set of social values. Moreover, a society may host several types of social values; it need not be a matter of either protestant work ethics or bohemianism, it may be both. Therefore, the emphasis of this paper is on the (set of) social values that are present in a society rather than on culture as an aggregate concept. The assumption is that social values, which reflect culture, shape the behaviour of individuals. Of course, the causal chain linking the social values of a region’s population to the economic development of that region is a long one. The behaviour that is a crucial element in this chain is performed on the level of individuals, not of populations and regions. But if social values are assumed to be responsible for a climate in which entrepreneurial behaviour can flourish, then it makes sense to explain how different social values contribute to the economic development of regions.

The literature distinguishes several types of social values that may create a favourable climate for economic development. Weber’s protestant ethic stresses the virtues of hard work. Social capital (Putnam, 2000) emphasizes the role of social networks. Inglehart (Granato *et al.*, 1996) argues that modernity rather than traditionalism favours economic development. Florida (2002a), finally, stresses the role of tolerance for non-traditional life-styles.

Departing from the assumption that social capital positively affects regional economic development, we estimate a path model that explains how the various types of social values that feature in the literature affect this causal relation. The path model contributes to the literature on social values and economic development in two ways. First, most contributions on this subject are theoretical or explorative in nature. Second, empirical contributions mostly focus on one or a few social values, while we take a comprehensive view.

This paper is structured as follows. The next sections discuss how several social values contribute to regional development. Next we present a comprehensive theoretical model that includes the different social values and the causal relations between them. We continue by discussing the data and operationalizations that form the basis of our empirical analysis. The final two sections discuss our empirical findings and the conclusions.

Social Capital

Social capital is not a social value as such, but is a “soft factor” that has been credited with having a large explanatory role in social and economic development in the recent

literature (Field, 2003). One of social capital's most prominent authors, Robert Putnam, argues that social capital refers to social connections and the attendant norms and trust (Putnam, 1995 in Iyer *et al.*, 2005, p. 1017). In a similar vein, Coleman (1988) explained that social capital facilitates coordination and cooperation for the mutual benefit of an association's members. Social capital, then, may be seen as an infrastructure, a social network that connects individuals and where the interactions between these individuals are supported by shared norms, values and trust (Westlund, 2006, p. 8). The value of social capital is two-fold. In the first place, being connected to others gives individuals access to opportunities, information and resources that would otherwise be beyond their reach. Secondly, shared norms, values and trust make social interactions more efficient (Burt, 2005). One of the effects of social capital, thus, is that it affects the behaviour of individuals in social networks. Since networks are valuable, people will be inclined to observe their norms and values so as not to breach trustful relations with their associates. In this way, individuals strengthen the quality of their social relations. Moreover, simply by having more connections, the quantity of social interactions may increase, which produces externalities in the form of individual welfare (Granovetter, 1973; Coleman, 1988; Burt, 2005; Iyer *et al.*, 2005). However, social capital is not exclusively beneficial. Social networks can also encourage an inward-looking attitude where individual behaviour is closely monitored by the group and individuals are coerced into observing group norms and values. In other words, depending on the kind of norms and values that are dominant in a social network, social capital can be either good or bad (Field, 2003).

Measuring social capital as a regional characteristic presents difficulties because it is actually formed on the level of individuals and social relations. Beugelsdijk and Van Schaik (2005) use measurements that say something about the number of social ties that can be found within a region and the time people spend on these ties. The idea behind this is as follows. Connections enable individuals to get access to opportunities, resources and information; therefore, the more the population of a region has social connections, the more externalities these connections produce that contribute to the social and economic development of the population and the region. This measure thus emphasizes the social infrastructure aspect of social capital. A greater number of social ties indicate a higher level of regional social capital. Moreover, the way in which the amount of social ties are measured, for example, in terms of the time that people spend on club activities, social engagements, meeting friends, etc., also says something about the investments in social capital of a region's population (Westlund, 2006, p. 22).

The problems of this argument are obvious, too. The fact that a social infrastructure is in place and that people invest in it does not automatically imply that individuals use it for the purpose of economic development. Moreover, the presence of a social infrastructure and the time people spend on it may say something about the quantity of the social connections in a region, but it does not necessarily say anything about their quality. Nonetheless, norms, values and trust make up a major part of the value of social capital. But the measure cannot distinguish between good or bad social capital. One way to include norms and values in the measurement of regional social capital is to hypothesize that certain norms and values are beneficial to the functioning of social networks. The more those norms and values are manifest in a region, the more the social networks in a region benefit from them, and the more they are able to produce favourable economic externalities. Beugelsdijk and Van Schaik (2005) suggest using the extent to

which the population of a region thinks that, in general, other people can be trusted as a proxy for the quality of social ties. Related to this, Westlund (2006) observed that Putnam (1993 in Westlund, 2006, p. 96) argued that homogeneity of a population strengthens social ties, while Florida (2002a) argued in favour of heterogeneity. In other words, either homogeneity or heterogeneity may be used as an indicator for the quality of a region's social capital.

In a study on the impact of social capital on innovation in regions, Hauser *et al.* (2007) also distinguished between the social networks and social values aspects of social capital. They found that the different elements of social capital (networks and the various values) have different effects on innovation. On the whole, though, social capital had a considerable effect on innovation, comparable to that of human capital. These results are corroborated by the findings of Akçomak and ter Weel (2007), who concluded that regions with higher levels of social capital are more likely to benefit from EU regional support programmes for innovation and economic growth.

In this paper, we choose to separate the two aspects of social capital: social networks and social values. The key argument for this is the inflation of several levels of analysis in the above lines of thought. Norms and values are a characteristic of social networks and are specific to different social networks (Etzioni, 1996; Field, 2003; Morgan, 2004). The norms and values that are manifest at the level of a (regional) population need not overlap with those governing social networks. In other words, the number of chains in the causal link between manifest norms and values and the social infrastructure of a region, on the one hand, and the economic development of that region, on the other hand, become so plentiful as to render the claimed theoretical mechanism questionable from an empirical perspective. We measure social networks as the presence of, and the investments in, a regional social infrastructure. The social values aspect we give more emphasis by distinguishing between several types of social values and their effect on regional development. We conceptualize the network aspect of social capital as our "social networks" variable. The various social values are captured in several other variables.

Protestant Ethics

One of the first studies into the role of social values in relation to economic development is Weber's *The Protestant Ethic and the Spirit of Capitalism* (2003/1905). In this book, Weber argued that Protestant, puritan ethics, are a major driving force behind the ascent of capitalism in Western societies. Capitalism, he argued, benefits from workers who are extremely dedicated to their craft, which they see as an end in itself, a calling (p. 53). The spirit of capitalism, then, is an "attitude which, in the pursuit of a calling, strives systematically for profit in its own sake" (p. 51). This protestant ethic favoured the spirit of capitalism through an emphasis on hard work. While other religions, too, have respect for secular everyday labour, Weber argued that for Protestants it is particularly important as worldly success is believed to be a sign of God's blessing and that the person enjoying this success has been saved by God. Furthermore, the puritan protestant ethic forbids people to indulge in worldly pleasures, so any capital gains must be invested, thus further fuelling capitalist development.

Weber did not limit the spirit of capitalism to Western culture, since it is an attitude of individuals, in particular entrepreneurs. Nor is the spirit of capitalism inseparable from religion. As Weber observed, some of the most passionate capitalists of his day were

not at all religious persons. In the language of this paper, the Protestant ethic embraces certain social values which favour economic development, such as hard work and investing one's earnings rather than spending them. The fact that these social values originate from protestant religious beliefs does not require a whole population to be religious for these values to become pervasive in their society. Nor does Weber claim that a protestant ethic is the only factor contributing to the rise of capitalism in protestant societies. The advent of rationalism in the pursuit of science, in economic enterprise, and in government administration all contribute to the elimination of magic from the world (p. 60) and encouraged people to take their destiny in their own hands rather than to leave it to a God. So the spirit of capitalism may more accurately be seen as the spirit of rationality.

In the contemporary literature, the value of Weber's argument is still acknowledged—as are his above-mentioned reservations. Landes (1998), too, argued that emphasizing hard work and investing the earnings from the work is a potent social value behind economic development. Particularly, in combination with other factors, such as scientific development and reliable institutions, the protestant ethic seems to be an important factor in the explanation of differences in economic development between societies. Porter (2000) makes similar observations. In order to establish the role of the protestant ethic in economic development, we need to find what social values are present in a society that emphasizes work over pleasure.

Modernism Versus Traditionalism

In recent years, Inglehart has conducted much research into the relation between culture (values), and economic development. Building on the motivational literature, he argues that certain values stress individual economic achievement, whereas others inhibit it (Granato *et al.*, 1996, p. 609). These values are “encouraged in children by their parents, schools, and other agents of socialization” (p. 610). Empirical research into the relationship between social values and economic development has led Inglehart to conclude that modernist values encourage individuals to pursue economic achievement and correlate this with economic development of societies. Values stressing traditionalism achieve the opposite (Inglehart & Baker, 2000). The causal relation between values and economic development works both ways. As argued, modernism encourages the pursuit of economic achievement but economic development is also conducive to modernism (Landes, 1998; Inglehart & Baker, 2000).

As Inglehart found, “The worldviews of the peoples in rich societies differ systematically from those of low-income societies across a wide range of political, social, and religious norms and beliefs (Inglehart & Baker, 2000, p. 23). Inglehart identified two dimensions that “reflect cross-national polarization between *traditional* versus *secular-rational* orientations towards authority; and *survival* versus *self-expression* values” (Inglehart & Baker, 2000, p. 23, italics in original).

Societies at the traditional pole emphasize religion, absolute standards, and traditional family values; favor large families; reject divorce; and take a pro-life stance on abortion, euthanasia, and suicide. They emphasize social conformity rather than individualistic achievements, favor consensus rather than open political conflict, support deference to authority, and have high levels of national pride and

a nationalistic outlook. Societies with secular-rational values have the opposite preference on all these topics. (Inglehart, 2000, p. 83)

The latter societies are characterized as modern and tend to be rich, while the former societies are traditional and tend to be of low income. In the present paper, we aim to replicate Inglehart's classification for European regions and to correlate the dominant values of these regions to their economic development.

Tolerance and Diversity

In today's knowledge economy, learning, innovation and creativity are of crucial importance for economic development (Kitson *et al.*, 2004). Although knowledge is available on a global scale, creativity and learning are still closely connected to specific places. Local culture is often argued to make places more or less conducive for creativity and learning (Morgan, 2004). Elaborating on the work of Jacobs (1961), Florida (2002b) argues that "the presence and concentration of bohemians in an area signals an environment or milieu that attracts other types of talented or high human capital individuals. The presence of such human capital concentrations in a region in turn attracts and generates innovative technology-based industries" (p. 56). In other words, Florida hypothesizes a link, albeit an indirect one, between bohemian lifestyles and economic development. "Bohemian", in Florida's view, refers to individuals with creative occupations such as authors, designers, musicians, actors, artists, etc. (Florida, 2002b, p. 59). Bohemians hold social values that express hedonism, non-conformism and a dislike of large organizations and bureaucracy (Florida, 2002a). As Florida argued, this means that bohemians are attracted to places that are open and tolerant to non-traditional lifestyles and that embrace socio-cultural diversity. Given the openness and tolerance of these places, all sorts of "non-traditional" people such as gays and ethnic minorities can be found there in substantial numbers, which further stresses a climate that is open to new ideas and change. This makes these places particularly good breeding grounds for creative occupations, since creativity produces new ideas and change. Highly talented people in other knowledge-intensive professions, such as lawyers, doctors, consultants and IT specialists, are attracted to these places because they offer a rich and diverse urban environment with many cultural amenities. In turn, these highly talented people work for companies, such as high-technology industries, that are the drivers behind economic development in the knowledge economy. When we tested this hypothesis underlying Florida's work (Rutten & Gelissen, 2008), we too found a significant correlation between the presence of bohemian values, tolerance for non-traditional lifestyles and a high concentration of non-nationals, on the one hand, and technology, innovation and economic development, on the other hand.

Consequently, there may indeed be an indirect relation between tolerance for non-traditional values and lifestyles and socio-cultural diversity of regions and their economic development, in that tolerance and diversity create an environment in which creativity can flourish. This attracts creative and talented people who are needed for knowledge creation and innovation which fuels economic development (Florida, 2002b, p.68). Although the work of Florida has met with substantial criticism (Glaeser, 2005), empirical evidence of Florida himself (2002a, 2002b) and our own research (Rutten & Gelissen, 2008) is sufficiently compelling to include tolerance and diversity in the present study into social values and the economic development of regions.

The Theoretical Model

We acknowledge that the various social values work in combination, not in isolation of one another. Therefore, we developed a path model that includes all the social values discussed above. The aim of our path model is to explain how the different variables in our research contribute to the explanation of the economic development of regions. Based on the causal mechanisms as discussed in the literature, this section develops a comprehensive theoretical model that explains how the different variables are conceptually related to each other.

Various empirical studies (Beugelsdijk & Van Schaik, 2005; Westlund, 2006; Hauser *et al.*, 2007) show that social networks (as part of social capital) contribute to economic development. This is because social capital reduces transactions costs (Westlund, 2006). Moreover, economic life is subject to conventions, informal rules and habits that coordinate actors, the so-called untraded interdependencies (Storper, 1997). Social networks (social capital) are the vehicles on which untraded interdependencies are effected in economic life. Social networks (social capital) also have a positive effect on innovation. The commonly used causal mechanism to explain this effect borrows from the social network literature (Granovetter, 1973; Coleman, 1988; Burt, 2005). On the one hand, bonding and bridging social capital both have a positive effect on knowledge exchange in networks, which, in turn, fuels innovation. On the other hand, strongly shared network norms and values, such as trust, increase the likelihood of knowledge exchange between network partners as it reduces risks. Knowledge exchange always carries the risk that competitive advantage may be lost, in particular for the initiator of the knowledge exchange. Empirical evidence for a strong effect of social capital on innovation comes from Akçomak and ter Weel (2008).

We have conceptualized the social values element of social capital in several variables. “Self-expression”, which includes trust, captures modernist values. They signal an open attitude and a desire to achieve things in life. It may therefore have a positive effect on both social networks and innovation. Self-expression may make it more likely for people to engage in social networking and thus increases the social capital. Self-expression may also make people more willing to share knowledge and make them more open to new ideas, which increases innovation. Self-expression, in sum, signals that people are committed to achieving their ambitions and that they are more open to others and to new ideas. Traditional values, on the other hand, may have the opposite effect. Moreover, modern societies tend to be richer than traditional ones (Granato *et al.*, 1996). This is because traditional values may encourage a society to develop an inward-looking attitude where people prefer to keep to themselves and are skeptical towards outsiders. This will have a negative effect on social networks (social capital). The fact that traditional societies are more reluctant to accept new ideas and new ways of doing things may have a direct negative effect on economic development. But it also negatively affects innovation. Traditional values may further negatively effect innovation because people in traditional societies may be reluctant to share knowledge and ideas.

Although a protestant work ethic is traditionally believed to encourage economic development, we take a more nuanced perspective. The knowledge economy is not about working hard, it is about working smart (Best, 2001). A Protestant work ethic may have a positive effect on economic development because societies that work hard will be better off than the ones that do not. However, if the emphasis is on working hard and

not on working smart, it may have a negative effect on economic development as no amount of hard work can compete with technological sophistication in modern economies. The distinction between working hard and working smart suggests that there may also be an effect of Protestant ethic on innovation. Societies that value working hard without being concerned about the kind of work they do, or how they do it, may have lower levels of innovation. According to Schumpeter (in Best, 2001), innovation is about creative destruction. New practices must replace old ones. Protestant ethic, however, may resist embracing the destructive element of innovation, as people may be reluctant to creatively destruct the fruits of their hard work. On the other hand, if working hard and working smart go hand in hand, Protestant ethic may have a positive effect on innovation.

The final social value that is deemed to encourage economic development is tolerance. Tolerance for non-traditional lifestyles signals openness to new ideas, new ways of doing things and to different kinds of people. This is believed to be conducive to innovation (Florida, 2002a). This kind of openness is also argued to be good for economic development in general, since it favours entrepreneurship (Granato *et al.*, 1996; Landes 1998). Therefore, we expect a positive effect of tolerance on economic development. In addition, tolerance may have a positive effect on social networks since it makes it more likely that people from different lifestyles will connect in social networks.

Melting pot is not a social value as such but it signals socio-cultural diversity in a society which, in turn, may have an effect on various social values. Melting pot may have a positive effect on tolerance because societies that are confronted with socio-cultural diversity may become more tolerant towards it. This is especially visible in the big cities of the Western world (Florida, 2002a). Melting pot may also have a positive effect on innovation since socio-culturally diverse societies may generate more new ideas (Florida, 2002a). Melting pot may have a negative effect on traditional values since those values may become increasingly less effective in a socio-culturally diverse society. On the other hand, if different socio-cultural groups in a society do not mix but develop an inward-looking attitude and adopt hostile feelings towards other groups, melting pot may actually encourage traditional values. Both mechanisms can be observed in many modern societies.

Human capital, too, may affect social values, as well as innovation and economic development. It may affect innovation because higher levels of human capital allow a society to develop and apply more complex technologies. Similarly, high levels of human capital allow more complex economic transactions to take place, which directly affects economic development. In addition, higher levels of education (human capital) may lead a society to move away from traditional values (Landes, 1998; Huntington & Harrison, 2000), which leads to a negative relation between human capital and traditional values. Furthermore, higher levels of education in a society may encourage tolerance of socio-cultural diversity because higher educated people are more inclined to judge people on their merits and achievements rather than their socio-cultural background (Granato *et al.*, 1996).

Finally, we include urbanization as a control variable for spurious associations in our model. As argued, urban regions are centres of gravity of economic development and socio-cultural life. They are the hubs of human social networks and they act as magnets to talented people (Jacobs, 1961; Florida, 2002a). An overview of the variables and the assumed causal relations between them is presented in Figure 1.

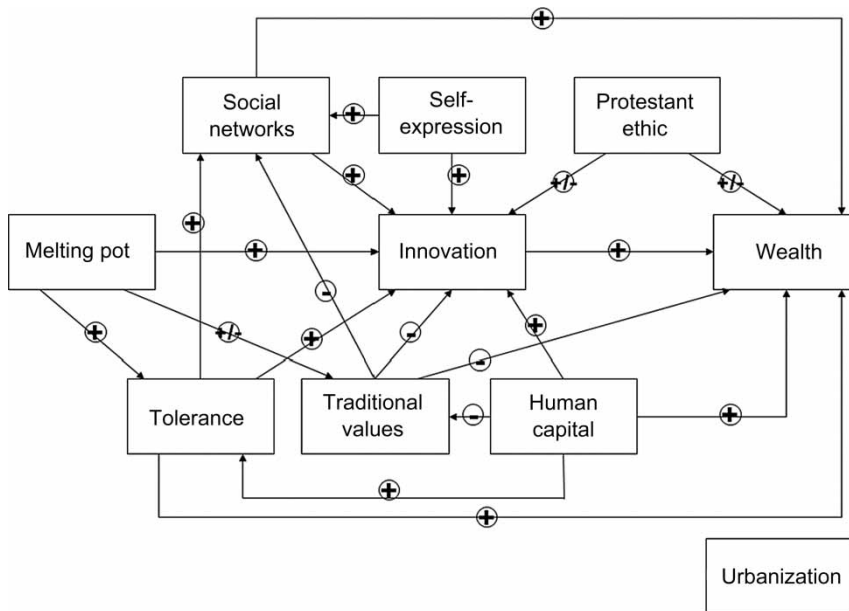


Figure 1. Theoretical model

The Regions

For practical reasons, the analysis in this paper is limited to the regions of the 15 “old” EU member states, since the availability of data is least problematic for these countries. Furthermore, the analysis is based on the statistical subdivision of the EU in NUTS regions. Our data set includes 129 regions (Table 1). After listwise deletion of missing values, we analysed data from 120 European regions. The regions in our sample are a mix of Nuts 1 and Nuts 2 regions. Nuts regions are administrative and/or statistical territorial units. Nuts 1 regions are the largest sub-national division, Nuts 2 regions are mostly somewhat smaller. Although the largest Nuts 1 regions are considerably larger in terms of surface and population than the smallest Nuts 2 regions, both types of regions are comparable in that they represent sizable sub-national units. A practical reason to include both Nuts 1 and Nuts 2 regions is that it increased the number of observations for our empirical analysis.

Operationalization

In this section, we discuss the operationalizations of our variables. The dependent variable in our study is *Wealth*, measured as the gross domestic product (GDP) per capita in purchasing parities, since higher levels of economic development usually translate into more wealth. In this study, we used cross-sectional data on GDP levels from 2005. Other variables were measured using data from earlier years (around 2000) in order to confirm the plausibility of posited causal effects.

The four social values identified above represent four different trains of thought on how social values help create an environment conducive to economic development. In defining

Table 1. The regions

1	Brussels	48	Illes Balears	95	Niederösterreich
2	Antwerpen	49	Andalucia	96	Wien
3	Limburg (B)	50	Murcia	97	Kärnten
4	Oost-Vlaanderen	51	Canarias	98	Steiermark
5	Vlaams-Brabant	52	Île de France	99	Oberösterreich
6	West-Vlaanderen	53	Bassin Parisien	100	Salzburg
7	Brabant Wallon	54	Nord-Pas de Calais	101	Tirol
8	Hainaut	55	Est	102	Vorarlberg
9	Liège	56	Ouest	103	Norte
10	Luxembourg (B)	57	Sud-Ouest	104	Centro
11	Namur	58	Centre-Est	105	Lisboa e Vale do Tejo
12	Denmark	59	Méditerranée	106	Alentejo
13	Baden-Württemberg	60	Ireland	107	Algarve
14	Bayern	61	Piemonte	108	Itä Suomi
15	Berlin	62	Valle d'Aosta	109	Etelä-Suomi
16	Brandenburg	63	Liguria	110	Väli-Suomi
17	Bremen	64	Lombardia	111	Pohjois-Suomi
18	Hamburg	65	Trentino-Süd Tirol	112	Stockholm
19	Hessen	66	Veneto	113	Östra Mellansverige
20	Mecklenburg-Vorpommern	67	Friuli-Venezia-Giulia	114	Sydsverige
21	Niedersachsen	68	Emilia Romagna	115	Norra Mellansverige
22	Nordrhein-Westfalen	69	Toscana	116	Mellersta Norrland + Övre Norrland
23	Rheinland-Pfalz	70	Umbria	117	Småland med öarna + Västssverige
24	Saarland	71	Marche	118	North East
25	Sachsen	72	Lazio	119	North West
26	Sachsen-Anhalt	73	Abruzzo	120	Yorkshire and the Humber
27	Schleswig-Holstein	74	Molise	121	East Midlands
28	Thüringen	75	Campania	122	West Midlands
29	Thessalia	76	Puglia	123	Eastern
30	Stereia Ellada	77	Basilicata	124	London
31	Peloponnisos	78	Calabria	125	South East
32	Attiki	79	Sicilia	126	South West
33	Notio Aigaio	80	Sardegna	127	Wales
34	Kriti	81	Luxembourg (Grand-Duché)	128	Scotland
35	Galicie	82	Groningen	129	Northern Ireland
36	Asturias	83	Friesland		
37	Cantabria	84	Drenthe		
38	Pais Vasco	85	Overijssel		
39	Navarra	86	Gelderland		
40	La Rioja	87	Flevoland		
41	Aragón	88	Utrecht		
42	Madrid	89	Noord-Holland		
43	Castilla y Leon	90	Zuid-Holland		
44	Castilla-la Mancha	91	Zeeland		
45	Extremadura	92	Noord-Brabant		
46	Cataluña	93	Limburg (NL)		
47	Valencia	94	Burgenland		

the four social values, we have tried to focus on their key assumptions, as this may allow us to identify the different roles that they are argued to play by their advocates. This also helps to avoid conceptual overlap.

The different variables are operationally defined as follows. In accordance with the work of Beugelsdijk and Van Schaik (2005), we constructed two dimensions for *Social networks*: membership of networks and activity in networks. Using the same EVS questions to measure both dimensions we, too, found that they measure the same variable, that is, the social networks aspect of social capital. To measure *Protestant ethic*, we constructed a scale from EVS that measures attitudes towards work. Factor analysis confirmed our scale. Modernist values we measured in the same way as Granato *et al.* (1996), on the basis of EVS data. Using similar or equivalent questions from EVS compared with their World Values Studies questions, we constructed two variables: *Traditional values* and *Self-expression*. The diversity values of Florida (2002a) we captured in two variables. From EVS, we constructed a *Tolerance* variable that measures the tolerance for non-traditional lifestyles. Eurostat data yielded our *Melting pot* variable, which measures the socio-cultural diversity of a region in terms of the percentage of non-nationals in a population.

In addition to the social values variables, we added several other variables that, according to the literature, affect economic development. *Innovation* is an important variable explaining economic development and is often measured in terms of R&D expenditure and patents (Hauser *et al.*, 2007). Drawing from the Eurostat database, we found that both measurements of innovation are highly correlated for the regions in our sample. Therefore, we chose only to include patents in our analysis. Another variable that must be taken into account is the level of *Human capital* of a region, which is often measured as the educational level of the work force (Florida, 2002a). Finally, urban regions, for a variety of reasons, are often more economically developed than other regions. Therefore, we used population density as a proxy for *Urbanization* (see Table 2 for more detailed operationalizations).

Descriptive statistics of the variables are reported in Table 3. Correlations between all variables are reported in Table 4.

Findings

In Table 5, we report the empirical results of a path-modelling regression analysis¹ pertaining to our theoretical model. Reported coefficients are standardized regression coefficients.

The findings of the first model, in which *Wealth* is regressed on social values/networks and structural characteristics of regions, indicate that *Innovation* is positively related to *Wealth*, holding constant other variables. *Social networks* is also positively related to *Wealth*, all else being equal. Finally, we find that as the degree of *Urbanization* of a region is higher, regional *Wealth* is also higher. The second model shows that *Social networks*, *Self-expression* and *Tolerance* are all directly related to *Innovation*, holding constant differences in *Human capital* between regions. *Human capital* is also positively related to *Innovation*, holding other variables constant. The third model shows that regional differences in *Social networks* are not directly related to regional differences in other social values. The findings pertaining to the final model indicate that as regions score higher on *Melting pot*, they have lower scores on *Tolerance*, holding constant

Table 2. The variables

Variable	Measurement
Wealth	GDP per capita in purchasing parities (2001). Source: Eurostat
Urbanization	Population density (inhabitants per km ²) (2001). Source: Eurostat
Innovation	Patents per million inhabitants (3-year average 1999–2002). Source: Eurostat
Human capital	Percentage of the workforce with a bachelor degree or higher (2002). Source: Eurostat
Melting pot	Percentage of non-nationals in the population (2002). Source: Eurostat
Tolerance	Could you sort out groups of people that you do <i>not</i> like to have as neighbours: people from different race, Muslims, immigrants/foreign workers, homosexuals, Jews, gypsies. Source: EVS (1999 survey)
Social networks	Do you belong to/do you do unpaid work for any of the following organizations: welfare organizations; religious organizations; cultural activities; trade unions; political parties/groups; local community action; Third World development/human rights; environment; professional associations; youth work; sports/recreation; women's groups; peace movement; voluntary health organizations; other groups. Source: EVS (1999 survey)
Protestant Ethic	A composite index based on the following attitudes: job needed to develop talents; humiliation receiving money without work; people turn lazy not working; work is duty towards society; work always comes first. Source: EVS (1999 survey)
Traditional values	A composite index based on the following attitudes (based on Granato <i>et al.</i> , 1996): how important is God in your life; teach children at home: religious faith; do you justify abortion; how proud are you to be a citizen of your country? Source: EVS (1999 survey)
Self-expression	A composite index based on the following attitudes (based on Granato <i>et al.</i> , 1996): which is more important: freedom or equality; how happy are you; signing a petition; do you justify homosexuality; people can be trusted/cannot be too careful. Source: EVS (1999 survey)

regional differences in *Talent*. We summarize these findings in Figure 2, which graphically depicts all significant relationships between the variables reported in Table 5.

As to the direct effects on *Wealth*, our findings are partially in agreement with our assumptions. Unsurprisingly, *Innovation* is positively and directly related to wealth, as

Table 3. Descriptive statistics of exogeneous and endogenous variables

	<i>N</i>	Minimum	Maximum	Mean	Std. deviation
Wealth	129	13,399.40	59,201.80	24,832.66	7088.91
Urbanization	130	3.90	6015.50	369.93	820.69
Melting pot	130	7.99	438.75	95.36	76.71
Human capital	130	31.02	192.13	98.01	38.05
Innovation	130	.33	454.30	81.91	85.08
Protestant ethic	121	2.60	4.30	3.38	.34
Tolerance	130	0.02	0.48	0.16	0.08
Traditional values	130	−1.28	1.19	0.00	0.468
Social networks	130	0.00	100.00	26.74	18.44
Self-expression	130	0.00	100.00	61.84	18.19
Valid <i>N</i> (listwise)	120				

Table 4. Pearson's correlation coefficients of variables included in the path model

	Wealth	Urbanization	Melting pot	Human capital	Innovation	Protestant ethic	Tolerance	Social networks	Self- expression	Traditional values
Wealth										
Urbanization	0.527**									
Melting pot	0.655**	0.546**								
Human capital	0.403**	0.346**	0.320**							
Innovation	0.434**	0.096	0.357**	0.406**						
Protestant ethic	-0.398**	-0.250**	-0.282**	-0.629**	-0.374**					
Tolerance	-0.176	-0.134	-0.332**	-0.299**	-0.192*	0.464**				
Social networks	0.265**	-0.008	0.170	0.117	0.301**	-0.449**	-0.152			
Self-expression	0.257**	0.165	0.350**	0.245**	0.413**	-0.419**	-0.782**	0.240**		
Traditional values	-0.340**	-0.180*	-0.265**	-0.589**	-0.466**	0.589**	0.380**	-0.250**	-0.502**	

Note: *N* (listwise = 120).

**p* < 0.05 (two-tailed test).

***p* < 0.01 (two-tailed test).

Table 5. Summary of path regression analysis for variables predicting wealth, innovation and social networks of regions (number of regions = 120; number of countries = 15)

Dependent variables	Wealth		Innovation		Social networks		Tolerance	
	Beta	s.e.	Beta	s.e.	Beta	s.e.	Beta	s.e.
Human capital	0.051	0.15	0.333**	0.114			−0.005	0.004
Innovation	0.315**	0.07						
Tolerance	0.010	0.04	0.465**	0.151	0.088	0.316		
Urbanization	0.467**	0.09						
Melting pot			0.152	0.099			−0.004**	0.001
Protestant ethic	−0.051	0.15	0.042	0.085				
Self-expression			0.562**	0.187	0.230	0.327		
Social networks	0.144**	0.05	0.164*	0.065				
Traditional values	−0.002	0.10	−0.091	0.160	−0.165	0.192		
R ²	0.506		0.419		0.082		0.145	

Note: Standard errors are adjusted for clustering of regions within countries.

* $p < 0.05$ (two-tailed test).

** $p < 0.01$ (two-tailed test).

is *Social networks*. The latter finding means that membership of and activity in networks correlates positively with economic development, which gives some support for the “closure thesis” as developed by Coleman (1988). Our control variable *Urbanization* is also positively related to *Wealth*, which is in line with mainstream thought in economic geography on the role of cities as catalysts of economic development (Storper, 1997; Florida, 2002a; Morgan, 2004).

Most of the social values in our model proved to have an indirect effect on *Wealth*, through *Innovation*. *Self-expression* has the strongest direct effect on *Innovation*, which offers support for our assumption that an open attitude favours the development and

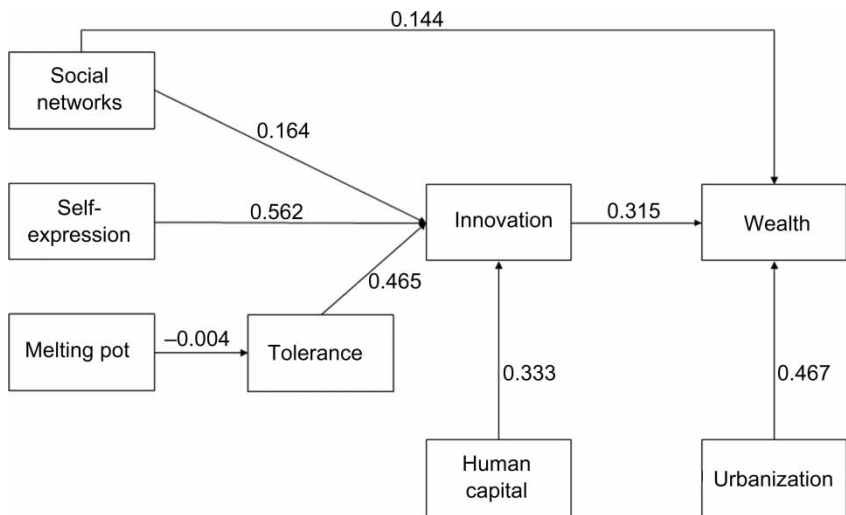


Figure 2. Path model, significant effects only

adoption of new ideas, and consequently, promotes innovation, which in its turn promotes *Wealth*. Additionally, the positive effect of *Self-expression* on *Innovation* gives some support to the modernism thesis (Granato *et al.*, 1996). The direct effect of *Tolerance* on *Innovation* that we found in our model leads to a similar conclusion. In other words, these findings are in agreement with the Florida (2002a, 2002b) thesis. Notably, missing for this Florida argument, though, is *Melting pot*, which, contrary to our assumptions, proves to have no direct effect on *Innovation* in our model, and only a very weak indirect effect via *Tolerance*. Contrary to the modernist thesis, *Traditional values* has no (negative) direct or indirect effect on *Innovation* in our model. *Human capital*, on the other hand, does have a (positive) direct effect on *Innovation* (but not on *Wealth*, so the effect of *Innovation* on *Wealth* is not spurious due to differences in *Human capital* between regions), which is in line with the mainstream literature on innovation. We found no effect of *Protestant ethic* but *Social networks* has a small positive indirect effect on *Wealth* via *Innovation* (the total indirect effect being $0.164 * 0.315 = 0.052$), as well as a stronger direct positive effect on *Wealth*. The latter direct effect of *Social networks* on *Wealth* gives some support to the various views in the literature of the role played by social capital in economic life (Coleman, 1998; Burt, 2005; Westlund, 2006), although our data are too limited to speak in favour of either bonding or bridging. The effect of *Social networks* on *Innovation* suggests that members of and activity in networks may be conducive to fostering knowledge flows that are at the basis of innovation. In addition, we found that *Urbanization* is not directly related to *Innovation*, and thus the effect of *Innovation* on *Wealth* is not spurious due to differences in levels of *Urbanization* between regions.

We also analysed the effects of *Tolerance*, *Traditional values* and *Self-expression* on *Social networks*, but, contrary to our assumptions, found no effects at all. This may mean that our theory is wrong, but it may also be the result of a necessarily weak operationalization of social networks as a membership of and an activity in social networks. This may explain the absence of any empirical effects, at least partially, since this operationalization does not accurately cover the theoretical definition of social networks that we used. For example, it may be problematic to relate membership of and activity in social networks to traditional values or self-expression. Particularly since the kind of social networks in our study (membership of unions, religious communities, local community associations, etc.) may signal an inward-looking attitude rather than the embrace-the-world attitude that the modernism thesis advocates. In other words, the social networks that facilitate creativity, innovation and, ultimately, economic development, may not be the ones in our study.

Furthermore, we investigated the assumed effects of *Melting pot* and *Human capital* on *Tolerance*. We found no direct effect of human capital and a negative effect of melting pot, while we expected a positive effect of the latter. Contrary to our expectations, our model finds that higher levels of socio-cultural diversity in a region reduce the level of tolerance of that region's population. One explanation is that we may be investigating this effect at the wrong level of analysis. Socio-cultural diversity in a region (*Melting pot*) may negatively affect the level of tolerance of a region's population when people see familiar areas undergo considerable change (Day, 2006). However, the social and professional circles where creativity and innovation flourishes may continue to foster a tolerant attitude, even if tolerance in the region as a whole is in decline. A better measure would take into account such more fine-grained compositional differences, but such measures are currently

not available. Finally, we note that the significant effects of exogenous and endogenous variables are found while holding constant for differences in the levels of urbanization of regions. This means, for example, that social values are relevant for the explanation of economic development and that this effect is not confounded by differences in urbanization between regions.

In sum, our findings suggest the following. First, that the effect of social capital (networks and values) on wealth is primarily an indirect effect through innovation. Second, that the various social values and social networks are largely independent of one another in our model. Third, that the various social values and social networks are unrelated to urbanization in our model. On the positive side, this means that we have found some evidence to support the claim that social capital (networks and values) matters in the explanation of the economic development of regions and that the effect of social values cannot simply be argued away by urbanization. On the negative side, however, we have not been able to shed light on the relations between the various social values that are strongly indicated in the literature. One possible explanation for this is a weak operationalization of our variables in terms of reliability and validity, such as in the case of social networks and tolerance. Another possible explanation for our failure to find relations between the social values/networks is that we may be looking at the wrong level of analysis. That is, we may have to look at subgroups in a region rather than at the regional population as a whole. It is conceivable that, for example, for the members of the creative class (Florida, 2002a) the relations between the various social values are in agreement with our assumptions. It is equally conceivable that, at the same time, the relations between the social values as held by traditional blue collar workers shows the opposite pattern and that, consequently, statistical effects largely disappear on the level of the regional population as a whole. Put differently, the causal mechanisms between the variables in our model may be different for different subgroups in the population of a region. More fine-grained data are needed to test this assumption. Finally, it is worth noting that our results are in agreement with those from Westlund and Calidoni-Lundberg (2007). Their study offers support for the effect of melting pot, tolerance and traditional values on regional development in Japan. However, they too found that the results are sensitive to the spatial level chosen for the analysis.

Conclusions and Discussion

In this contribution, we have made a first theoretical and empirical effort to model the mechanisms in which social capital (networks and values) may be relevant for the explanation of regional differences in wealth. Our findings suggest social capital, that is, social networks (Coleman, 1988, Burt, 2005), modernism (Inglehart, 2000, Inglehart & Baker, 2002) and tolerance and diversity (Florida, 2002a, 2002b), affects regional economic development, albeit largely indirectly through innovation. Moreover, this effect is not spurious as both innovation and wealth are a consequence of urbanization. However, in view of the nature of our data, there are two notes of caution when interpreting our findings. First, the operationalizations of our variables do not satisfactorily measure the underlying theoretical concepts. Second, our findings suggest that the region may not be the proper level to analyse the causal mechanisms that we hypothesized. With regard to the operationalizations, in the first place, one can point at GDP per capita as a flawed measure of economic development (Beugelsdijk and Van Schaijk, 2005). More importantly, though,

our theoretical understanding of innovation refers to the creative efforts of knowledge workers, while our variables measure patents. That is, we use an output indicator to measure a process. Also, our measure for social networks seems limited, since it captures the membership of and the activity in a particular type of social networks. These networks do not necessarily matter for creativity and innovation. That is, they may not provide access to the kind of resources that matter in the knowledge economy.

Our main conclusion is that we found social values and social networks to be important—in an indirect way, because they promote innovation—in the explanation of regional economic development. However, the evidence is not overwhelming, and we propose as a tentative explanation for this finding the hypothesis that social values and social networks are more effective at the level of subgroups in the regional population rather than at the level of the region as a whole. The theoretical argument underlying this conclusion is that social values are effected through social interactions in networks. Therefore, in order to explain how social values impact on regional economic development, one has to look at subgroups in the regional population and their networks, that is, their social capital. Although evidence suggests that (national) social values affect economic development (Hofstede, 1980; Landes, 1998; Huntington & Harrison, 2000), the kind of social values that are argued as relevant for knowledge-based economic development are by no means pervasive throughout a population (Jacobs, 1961; Florida, 2002a). Rather, these social values are characteristics of social networks (Field, 2003; Morgan, 2004; Day, 2006). Social values, such as modernism, tolerance and diversity, to a large extent govern interactions in social networks. That is, they decide whether networks are open-minded places for the exchange of a wide variety of ideas, or whether they are inward-looking and suspicious of new ideas. The first type of networks are expected to support creativity, knowledge creation, innovation and, therefore, economic development. The second type of networks are expected to hamper knowledge-based economic development. We argue that regions are likely to host both types of networks. Looking at networks rather than at regions sheds a different light on the spatial dimension. After all, networks are not necessarily spatially restricted. So the question arises: How are social values spatially sticky? In line with Florida (2002a) and Morgan (2004), we argue that humans are spatially sticky, even in a globalized world. The demographic, cultural, social and economic characteristics of the places where they live and work shape how they interact in social networks and thus to the kind of social values that become dominant. Therefore, social values may differ from one place to another. It also leaves open the possibility that a specific place may support very different social values if the subgroups living there do not frequently interact (Etzioni, 1996; Day, 2006). That is, places may be home to a variety of socio-cultural “biotopes”.

Given that social values are acted out at the level of social networks, more fine-grained data are necessary to research how social values contribute to regional economic development. At the very least, research needs to focus on the various subgroups in a regional population, for example, on what Florida calls the creative class. Members of the creative class may hold different social values compared with other subgroups in the regional population, but they may also differ from one region to another. Only if we know the social values of the creative class in a particular location can we understand how these values affect interaction in networks. This also means that a narrow conceptualization of social capital as networks that give access to resources (the structural dimension) is not sufficient. Having access to resources and being able to use them is as much a function of the social

values governing network interactions as it is of the structure of a network. In other words, we argue that social values must be prominently included in the study of social capital for a proper understanding of how social capital may contribute to economic development.

Note

1. Standard errors of parameters are adjusted because of non-independence of regions due to clustering within countries by using a sandwich estimator. The model estimation was done in Mplus.

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